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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,867	07/22/2003	Jari Hulkkonen	59643-00282	6401

32294 7590 10/31/2006

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EXAMINER	
WIMER, MICHAEL C	

ART UNIT	PAPER NUMBER
2821	

DATE MAILED: 10/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/623,867	HULKKONEN ET AL.	
	Examiner	Art Unit	
	Michael C. Wimer	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 August 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,6,7,9-24,26 and 28-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,6,7,9-24,26 and 28-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1,3,6,7,9-24,26 and 28-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martek (6268828).

Regarding Claims 1,3,6,7,9-24,26 and 28-35, Martek shows an antenna arrangement, for example in Fig. 9, comprising at least two antennas for providing a predetermined coverage area to a plurality of mobile units (e.g., cellular phones within a cell system network) and having at least two different antennas 2x-1,2x-2 and 2x-3,2x-4, provided with a plurality of frequencies within the band of operation, providing two separate phase centers for each antenna, thus, defining "different antennas", where a different beam-tilt is provided (see col. 16, lines 41-50), the adjusting means 530a (col. 16, lines 51-62) provides for dynamically adjusting transmission properties of the lower antenna. Two different vertical properties are defined because of the dynamically-provided downtilt. Thus, it would have been obvious to the skilled artisan that the entire antenna array provides a "predetermined coverage area" and since two different arrays are defined, so are two different areas that those radiation patterns service. The array is designed for a particular coverage area by having the

antenna characteristic of beamwidth and the pattern may be plotted, which defines the coverage area.

Also, it would have been obvious to the skilled artisan that the lower antenna provides for distribution of users within the area covered by the beam therefrom, particularly since separate and different phase centers are associated with each respective antenna array.

The use of allocating means, dynamically as claimed, is provided by allocating at least one user equipment to the group of users in the area noted above (i.e., the beam with the most beam tilt). A skilled artisan would have found it obvious that allocating means comprises the network disclosed by Martek, where an individual cellular phone is allocated a frequency pair, has an identification within the network and thus utilizes the particular beam (either one having varying degrees of beam-tilt). Such a condition derives a dynamically adjusted transmission property for a particular antenna array. The frequency pairs are assigned in the system in order to avoid interference. In other words, no adjacent user operates on the same frequency pair. The system will not allow it.

Regarding Claims 3,6,7 and13-23, a skilled artisan would have found it obvious that the users are associated with respective layers, corresponding to the beams, and their frequency pairs associated with their groups of users within respective cells.

Response to Arguments

3. Applicant's arguments filed 8/17/2006 have been fully considered but they are not persuasive. Specifically, each antenna array does define a predetermined coverage area. Such area is defined in design since all antenna arrays have a beam pattern and thus a coverage area. The antenna links the radio signal with the best quality within the array, either upper or lower array dependent upon its location and signal strength. A dynamic allocation is therefore obtained. Additionally, dynamic allocation of frequencies also occurs because users cannot share the same frequency pair. It is not possible in such a system.

The antennas in Martek do provide separate coverage areas predetermined by the their radiation pattern plots. Each array has a unique pattern and the phase centers are not coincident.

It would appear that the beam patterns, such as those arranged in figure 3 of this application are critical in the setting forth the inventive concepts. It is suggested to further enhance the language of the claims in order to set forth the radiation properties of the two arrays.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

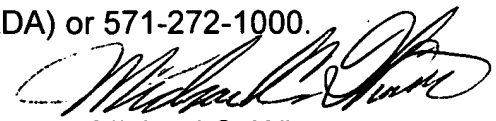
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Wimer whose telephone number is (571) 272-1833. The examiner can normally be reached on M-F.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Michael C. Wimer
Primary Examiner
Art Unit 2821

MCW
10/27/2006